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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,976	10/31/2006	Kwang Choon Chung	5038-060390	5470

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EXAMINER

THOMAS, JAISON P

ART UNIT	PAPER NUMBER
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1796

MAIL DATE	DELIVERY MODE
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09/30/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/567,976	Applicant(s) CHUNG ET AL.	
	Examiner Jaison P. Thomas	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23 is/are allowed.
- 6) ☒ Claim(s) 13-17 and 22 is/are rejected.
- 7) ☒ Claim(s) 18-21 and 24-29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/10/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/16/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 15 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 15 and 17, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Applicants are suggested to include specific examples of chemical species in a separate dependent claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Shibue et al. (US Patent Application Pub. No. 2003/0056571).

Shibue et al. discloses a polymer which contains 2 percent of a diamine monomer containing a vinyl group (which the Examiner construes as equivalent to a crosslinking functional group), 48 percent of a monomer containing a diamine structure, and 50 percent of a dihaloalkane compound (pg. 13, para. 0220, Example 10). The reference specifically or inherently meets each of the claimed limitations.

6. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibue et al. (US Patent Application Pub. No. 2003/0056571).

Shibue further teaches a polymer containing 50 percent of a diamine compound, 40 percent of a dihaloalkane compound and 10 percent of a dihalogen compound containing an alcohol group (which the Examiner construes as equivalent to halogen containing alcohol) (pg. 13, para. 0238, Example 28).

Shibue is relied upon as disclosed above. However, the reference teaches amounts of dihaloalkane and dihalogen compounds containing an alcohol which are outside the ranges in Claim 13.

A *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have

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expected them to have the same properties, see *Titanium Metals Corp. of America v. Banner*, 778F.2d 775,227 USPQ 773 (Fed. Cir. 1985). See MPEP 2144.051.

7. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shibue et al. (US Patent Application Pub. No. 2003/0056571) in view of Gamota et al. (Gamota et al., "Printed Organic and Molecular Electronics," pg. 315 (2004)).

Shibue et al. notes that the polymer composition used in the manufacture of the humidity sensor can be applied to a substrate by a variety of methods including screen printing (Col. 28, line 6).

Gamota et al. notes that screen printable inks can have viscosities which range from 0.5 to 50 poise (50 to 5000 cps) (Gamota et al., pg. 315, 4th para.).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the screen printing methods taught in Shibue to produce a sensor with an inkjet method for the notoriously well known advantages of improved reproducibility of parts produced, faster production times and more efficient use of raw materials. The Examiner notes that Applicants' own specification has defined inks with viscosities of 2 to 100 cps as being suitable for inkjet printing (Specification, pg. 7, lines 25-28).

Allowable Subject Matter

8. Claims 18-21,23 and 24-29 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: the closest prior art known to the Examiner is listed on the attached PTO 892 and 1449 forms. None of the prior art teaches the crosslinking compounds, ink compositions used in conjunction with the composition of claim nor a process of producing of humidity sensor using an ink composition as required by the objected claims listed above.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaison P. Thomas whose telephone number is (571) 272-8917. The examiner can normally be reached on Mon-Fri 9:30 am to 6:00 pm.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. P. T./
Examiner, Art Unit 1796

/Mark Kopec/
Primary Examiner, Art Unit 1796